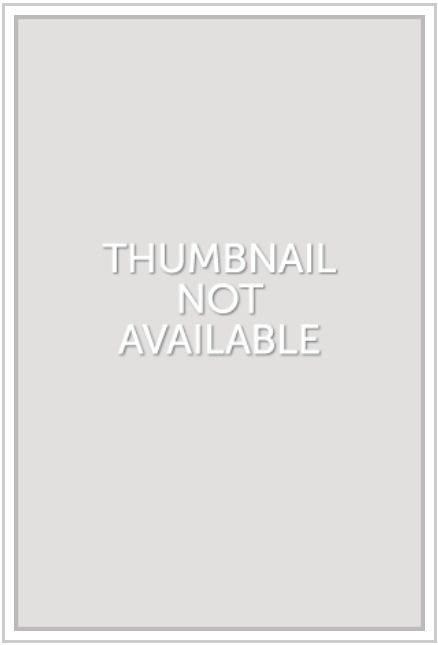



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# Microhardness and Strain Field Characterization of Self-Reacting Friction Stir and Plug Welds of Dissimilar Aluminum Alloys

By National Aeronautics and Space Administration (NASA)

Bibliioscholar Mrz 2013, 2013. Taschenbuch. Book Condition: Neu. 246x189x7 mm. This item is printed on demand - Print on Demand Neuware - Friction stir welding (FSW) is a solid state welding process with potential advantages for aerospace and automotive industries dealing with light alloys. Self-reacting friction stir welding (SR-FSW) is one variation of the FSW process being developed at the National Aeronautics and Space Administration (NASA) for use in the fabrication of propellant tanks. Friction plug welding is used to seal the exit hole that remains in a circumferential SR-FSW. This work reports on material properties and strain patterns developed in a SR-FSW with a friction plug weld. Specifically, this study examines the behavior of a SR-FSW formed between an AA 2014-T6 plate on the advancing side and an AA 2219-T87 plate on the retreating side and a SR-FSW (AA 2014-T6 to AA 2219-T87) with a 2219-T87 plug weld. This study presents the results of a characterization of the micro-hardness, joint strength, and strain field characterization of SR-FSW and FPW joints tested at room temperature and cryogenic temperatures. 114 pp. Englisch.

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